

CLAIMS

1. An imaging system, comprising:
 - a plurality of objectives defining respective object fields of view and corresponding image fields of view; and
 - an object for controllably illuminating said object fields of view with light that varies spatially in one or more selected characteristics, for creating respective images within said image fields of view.
2. The apparatus of claim 1, wherein said object produces as an object a predetermined radiance pattern to be imaged onto an image surface within said image fields of view.
3. The apparatus of claim 1, wherein said object is adapted to be controlled by electrical signals.
4. The apparatus of claim 3, wherein said object includes computer-controlled light emitting pixels, each set of pixels corresponding to a different image field of view.
5. The apparatus of claim 3, wherein said object includes computer-controlled light modulating pixels, each set of pixels corresponding to a different image field of view.
6. The apparatus of claim 1, wherein said one or more selected characteristics includes the radiance of said light.
7. The apparatus of claim 1, wherein said objectives are double-telecentric.

8. The apparatus of claim 1, further comprising a set of apertures optically disposed with respect to said objectives to produce partial coherence in the light associated therewith.

9. The apparatus of claim 1, wherein said object is adapted to produce light as an object that varies spatially in said one or more characteristics within different object fields of view.

10. The apparatus of claim 9, wherein the optical axes of said objectives are parallel.

11. The apparatus of claim 10, wherein said image fields of view are smaller than the corresponding object fields of view, for demagnifying said object.

12. The apparatus of claim 1, further comprising a scanning mechanism for translating a device with respect to said objectives so as to vary the position thereof, a position sensor for sensing said position, and a stroboscopic triggering mechanism for stroboscopically triggering said light in relation to said position.

13. A method for imaging, comprising:

providing a plurality of objectives defining respective object fields of view and corresponding image fields of view; and

controllably illuminating said object fields of view with light that varies spatially in one or more selected characteristics, for creating respective images within said image fields of view.

14. The method of claim 13, wherein said step of illuminating produces as an object a predetermined radiance pattern to be imaged onto an image surface within said image fields of view.

15. The method of claim 13, further comprising controlling said illumination with electrical signals.

16. The method of claim 15, further comprising providing light emitting pixels for controlling said illumination, each set of pixels corresponding to a different image field of view.

17. The method of claim 15, further comprising providing light modulating pixels for controlling said illumination, each set of pixels corresponding to a different image field of view.

18. The method of claim 17, wherein said one or more selected characteristics includes the radiance of said light.

19. The method of claim 13, wherein said objectives are double-telecentric.

20. The method of claim 13, further comprising providing a set of apertures optically disposed with respect to said objectives to produce partial coherence in the light associated therewith.

21. The method of claim 13, wherein said step of illuminating produces light as an object that varies spatially in said one or more characteristics within different object fields of view.

22. The method of claim 21, wherein the optical axes of said objectives are parallel.

23. The method of claim 22, wherein said image fields of view are smaller than the corresponding object fields of view, for demagnifying said object.

24. The method of claim 13, further comprising optically disposing photosensitive material at said image fields of view, to expose said photosensitive material according to said object fields of view.

25. The method of claim 24, further comprising applying said photosensitive material to a device, for defining features on said device with said images.

26. The method of claim 25, wherein said photosensitive material is photoresist.

27. The method of claim 26, wherein said image fields of view are smaller than the corresponding object fields of view, for demagnifying said object fields of view to define small features on said device.

28. The method of claim 27, wherein said device is a semiconductor wafer.

29. The method of claim 27, further comprising translating said wafer so as to vary the position thereof, wherein said illumination is triggered stroboscopically in relation to said position.

30. The method of claim 27, further comprising translating said wafer so as to vary the position thereof, wherein said light is continuously provided.

31. The method of claim 27, wherein said image surface is part of a device, the method further comprising translating said device so as to vary the position thereof, wherein said light is triggered stroboscopically in relation to said position.

32. The method of claim 14, further comprising translating said wafer so as to vary the position thereof, wherein said light is continuously provided.

33. The method of claim 14, wherein said image surface is part of a device, the method further comprising translating said device so as to vary the position thereof, wherein said light is triggered stroboscopically in relation to said position.